CLAIMS

1. (Currently amended) A method for constructing MPEG I-frames comprising the steps of:
   a) configuring a JPEG engine to produce ~~byte-aligned~~ JPEG data in which discrete cosine transform coefficients are encoded in a byte-aligned manner; and
   b) performing JPEG processing, using the JPEG engine, on an uncompressed digital image, producing ~~byte-aligned~~ JPEG data encoding discrete cosine transform coefficients in a byte-aligned manner; and
   c) reading the ~~byte-aligned~~ JPEG data; and
   d) converting the JPEG data to MPEG data.

2. (Original) The method of claim 1, further comprising the step of storing the MPEG data in an MPEG file.

3. (Original) The method of claim 2, further comprising the step of adding file header information to the MPEG file.

4. (Original) The method of claim 1 wherein the step of configuring the JPEG engine is accomplished by specifying table generating values that are used by the JPEG engine to generate Huffman code tables.

5. (Currently amended) The method of claim 1, further comprising the steps of:
   a) providing conversion tables for converting ~~byte-aligned~~ JPEG data in which discrete cosine transform coefficients are encoded in a byte-aligned manner to MPEG data; and
   b) performing the step of converting the JPEG data to MPEG data using the conversion tables.

6. (Currently amended) A digital imaging device comprising:
   a) a lens for focusing light; and
   b) an electronic array light sensor for receiving the focused light from the lens; and

c) a logic unit for controlling the ~~camera~~ digital imaging device and receiving image information from the electronic array light sensor, the logic unit comprising a microprocessor system and a JPEG engine, the logic unit adapted to

i. configure the JPEG engine to produce a ~~byte-aligned~~ data stream in which discrete cosine transform coefficients are encoded in a byte-aligned manner; and

ii. convert the ~~byte-aligned JPEG~~ data stream to an MPEG data stream representing an MPEG I-frame.

7. (Original) The digital imaging device of claim 6 wherein the digital imaging device is a camera.

8. (Currently amended) An image compression system comprising:

a) means for obtaining an uncompressed digital image; and

b) means for performing JPEG image processing; and

c) means for configuring the JPEG processing means to produce a ~~byte-aligned~~ data stream in which discrete cosine transform coefficients are encoded in a byte-aligned manner; and

d) means for converting the ~~byte-aligned JPEG~~ data stream to a data stream representing an MPEG I-frame.

9. (Original) A table of byte-aligned codes for JPEG DC coefficients, the table comprising Huffman codes, each Huffman code having a following bit pattern, the combined lengths of each Huffman code and corresponding following bit pattern being an integer multiple of 8 bits.

10. (Original) The table of claim 9, the table comprising nine Huffman codes having lengths of 1, 2, 3, 4, 5, 6, 7, 8 and 8 bits, followed by bit patterns of 7, 6, 5, 4, 3, 2, 1, 0, and 8 bits respectively.

11. (Original) A table of byte-aligned codes for JPEG AC coefficients, the table comprising Huffman codes, each Huffman code having a following bit pattern, the

combined lengths of each Huffman code and corresponding following bit pattern being an integer multiple of 8 bits.

12. (Original) The table of claim 11, the table comprising 130 Huffman codes allocated as sixteen Huffman codes of each length 8, 9, 10, 11, 12, 13, 14, and 15 bits and two codes of length 16 bits, each code followed by a following bit pattern such that each Huffman code and its following bits consist of 16 total bits.

13. (Original) A lookup table that correlates byte-aligned JPEG DC coefficient codes and following bits with equivalent MPEG DC coefficient codes and following bits.

14. (Original) A lookup table that correlates byte-aligned JPEG AC coefficient codes and following bits with equivalent MPEG AC coefficient codes.

15. (New) A method, comprising configuring a JPEG engine to produce bit patterns that encode discrete cosine transform coefficients, each bit pattern that encodes a discrete cosine transform coefficient having a length that is an integer multiple of eight bits.

16. (New) The method of claim 15, wherein each bit pattern that encodes a discrete cosine transform coefficient comprises a Huffman code.

17. (New) The method of claim 16, wherein at each bit pattern that encodes a nonzero discrete cosine transform coefficient comprises a set of one or more following bits.

18. (New) The method of claim 15, further comprising:

providing a table that correlates the bit patterns produced by the JPEG engine with corresponding bit patterns that encode the discrete cosine transform coefficients in MPEG format; and

indexing into the table, using a bit pattern produced by the JPEG engine, in order to locate the corresponding MPEG bit pattern.

19. (New) The method of claim 15, wherein the JPEG engine is implemented in software.

20. (New) A method, comprising constructing JPEG data in which each bit pattern encoding a run/value combination has a length that is an integer multiple of eight bits.

21. (New) The method of claim 20, further comprising configuring a JPEG engine to produce the JPEG data.

22. (New) The method of claim 20, wherein each bit pattern that encodes a run/value combination comprises a Huffman code that encodes a run/size combination, and a following bit pattern that encodes a value for an AC discrete cosine transform coefficient.

23. (New) The method of claim 20, further comprising constructing JPEG data in which each nonzero DC discrete cosine transform coefficient is encoded by a bit pattern having a length that is an integer multiple of eight bits.

24. (New) The method of claim 20, further comprising converting the JPEG data to MPEG data using a lookup table.